ForesTalk

RESOURCE MAGAZINE SPRING 1978

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Minister's Message

For the past fourteen months, the Forest Policy Advisory Committee of B.C. has analysed the Pearse Royal Commission Report on forestry, and has sought opinion regarding the report from all sectors of the public, industry and government agencies. This committee is now in the final stages of recommending to government the basis for new forestry and range legislation and policy for British Columbia and for a restructured Forest Service. The new legislation and more efficient organization, to be introduced and explained to the public at the spring sitting of the legislature, will signify the beginning of an era of more intensive management in two of our major resource sectors.

Hon. T.M. Waterland, *Minister of Forests*

Cover photograph by R. Benedict captures Forest Service Supervisor of Scalers Bryant measuring the diameter of logs in July 1914. Over seventy years later, the scaling techniques used today are still essentially the same.

FEATURES

Closing the Gap The widening gap between government, industry, labour and environmental organizations is being reversed. by Cameron Young 3

A Perspective on Forest Policy The phenomenal growth of British Columbia's forest industry has in large measure been made possible through application of forest policy. Today, we are at the crossroads. by Jean Sorensen 10

Decision on the Tsitika It's still a major issue, but never before have so many people co-operated so fully towards resolving the land use question. by Michael Gregson 20

FOREST HABITAT
Nature's Blanket For many people, snow is both a pest and a pleasure. For nature to accomplish her task, it's essential. by Enid K. Lemon 28

DEPARTMENTS

Letters to the Editor 17

People by Ray Wormald 18

Collections Edited by Michael Gregson 25

SPECIAL SECTION

How a Tree Grows An educational journey on the growth of trees. 7

Metrics 27

2007-04835/

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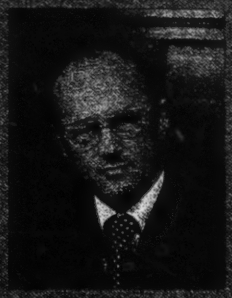

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Closing the Gap

by **Cameron Young**

photography by Peter Robin

At this particular day-long meeting, members of the Forest Land Use Liaison Committee held discussions on a variety of topics ranging from adopting a set of planning principles that would govern the development of future water reservoirs in B.C., pesticide control, reforestation, the Tsitika-Schoen Resource Plan, to identification of important hiking trails with standardized signs.

Public debate over the proper use and management of British Columbia's forests emerged in the early 1970s. As soon as it did, everyone immediately chose sides. There were good guys on one side, bad guys on the other, and helping things along in the middle was the media.

Hugh Clifford of the Steelhead Society, for example, admits that as an environmentalist, he felt the forest industry was his outright enemy. Clifford justified his attitude at the time by pointing to past logging practices which, in his opinion, showed little regard for the forests' other users. On top of that, there were no formal avenues of communication between environmentalists and the forest industry. Communication by confrontation was the only open channel.

Today things have changed. Clifford now meets regularly with other members of the Forest Land Use Liaison Committee to discuss, in a rational way, new and updated principles of forest land use. Altogether, there are places for 28 members on the committee. This allows room for eight representatives from government resource agencies, eight from industry, and 12 from public groups concerned with the environment. Currently the committee has 24 active members

who meet regularly, and who go out together on special field trips.

Since the committee's inception, Hugh Clifford has been pressuring it to accept the principle that it is the public's right — not a privilege — to use the forest along with industry. Grant Ainscough, Chief Forester of MacMillan Bloedel, is pleased that industry now can actually raise the issue of forest economics before a group of environmentalists, something that was unthinkable a few years ago. And Bill Young, Assistant Chief Forester of the Ministry of Forests, is pleased that everyone is talking to each other. He is especially pleased that the committee is discussing the twin objectives of planned recreational and industrial use of the forests.

The Forest Land Use Liaison Committee had its origins in late 1973 and early 1974, a time when the forest industry and environmental groups seemed to be clashing at every turn. Previously, the Land Use and Environment Committee of the Council of Forest Industries (an umbrella group representing most forest companies in B.C.) had been inviting various environmental groups to meet individually with forest industry representatives. The objective was to see if the two factions could begin to solve some of their differences. But soon a formalized committee structure had to be established to accommodate all the requests to join the conversations. Shortly after that, representatives of the Ministry of Forests and other government resource agencies were invited to participate as advisors.

Today, the Forest Land Use Liaison Committee enjoys an independent status, and has recently established specific rules of membership and terms of reference. It describes itself as a discussion group whose members represent province-wide organizations of forest users.

At the original meetings in 1974 the sheer novelty of environmentalists meeting with industry wore off quite quickly, and soon the group was ready for more detailed discussions. Each member organization listed its five major concerns, and these lists were compared around the table. It turned out that the topic of public participation in forest land planning was the one listed most often by most organizations. Next, came the question of pesticides, followed by streambank, watershed, and estuary protection. Other items of common concern were the issues of road access, alpine logging, and wildlife management. At that point the committee agreed to try to work out consensus statements on each of these issues. To date, the topics of public participation and watershed management have gone through such a process.

Most members agree that these consensus statements are not the last word on an issue, representing as they do the lowest common denominator or collective thought on a given point. Since the committee meets every other month or so, it takes the members some time to debate the contents of the statements, struggling determinedly over items such as the definition of 'greenstrip' (they never did write a definition for that one). The statements really represent the most primitive stages of agreement on land use issues. Just because the main users of the forest are now meeting on a regular basis, it does not automatically follow that all land use issues will suddenly be resolved.

Although it is not written directly into the terms of reference, industry, government and environmental groups are expected to send senior representatives from their own organizations to represent them on the committee. These are people who can speak with authority, people who represent most of the forest users in British Columbia. In a committee with such high power representation, no one has a choice but to take the meetings seriously. Of course, each member assumes from the outset that he or she is likely to disagree severely with other committee members on certain issues. What keeps them all going is a shared belief that everyone truly wants to improve the quality of dialogue on forest land management. This dialogue is supported by field trips that inspect examples of logging practises and study environmentally sensitive areas. A number of committee members feel that these field trips are the most useful activities in which the committee engages.

Government resource agencies have a different status on the committee than that of the other two groups. Their representatives function as resource persons, providing the significant data on an issue and advising on current government policy. When it comes to signing a committee consensus statement, however, or joining the committee in making recommendations to the Cabinet on forest land use, government representatives are not usually in a position to commit government to specific courses of action. Their role on the committee is to help promote dialogue.

Assistant Chief Forester Bill Young feels it is imperative that he participate on the committee, to help develop the land use debate in B.C. If forest users were not talking, if they were competing with each other at every turn, the government would be forced into legislating a very detailed land use policy. However, Young feels that over-reliance on legislative (and judicial) routes to forest land planning could counteract the current trend toward developing site-specific land planning programs. The alternative to rigid legislation is dialogue, consensus, and compromise. Young wants to promote that process in every way possible.

Clearly, the committee will be busy for a long time to come, and many more field trips are still to be taken. But in the long run this positive approach to land planning is bound to be reflected in more harmonious and rationally designed land management practices in British Columbia.

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Grant Ainscough
(Co-chairman of the Forest Land Use Liaison Committee and Chief Forester of MacMillan Bloedel)

"First and foremost, the Forest Land Use Liaison Committee is there to provide a mechanism to exchange information. We never said we would make any decisions. The consensus statements are really by-products of dialogue.

Once the environmental groups and industry began meeting, their relationship changed from one of confrontation to that of consultation. And you know, it is actually possible now for the industry to raise the question of economics!

Industry's particular concern is in the growing erosion of the land base for forestry, and it is only through co-use that we will succeed in making the most of our forest resources.

Obviously, industry has a big stake in making this process work."

Bev Evers
(Sierra Club, Western Canada Chapter)

"The meetings themselves are valuable, inasmuch as they improve our understanding of the managers of the forest. In turn, government and industry can develop a better understanding of the Sierra Club.

However, there is one hazard, or caution. We have to be careful that we don't become a nice, cozy ingroup developing well thought out position papers and telling each other how well things are going — while neglecting to take this information back to our parent bodies, or neglecting to look at the reality of the management of our forests.

The consensus statements really act as a barometer, revealing the level of discussion and agreement among the three factions on the committee. But that's important. The consensus statement on public participation, for example, indicates we have come a long way from the days — not so long ago — when there were still locks on the logging road gates.

Finally, it is still up to the Sierra Club to go out and look at the land ourselves, and if we don't like what we see, we will continue to bring it to the attention of the public."

Bill Otway
(B.C. Wildlife Federation)

"For the past 15 to 20 years the Wildlife Federation has had a running battle with the forest industry over the use of the land. So obviously, it is far more productive for us to be sitting around a table than out in the streets engaging in newspaper warfare.

Of course, there are 1,001 topics to be discussed, and on many of them it isn't likely we could come up with a consensus. But our disagreements no longer feed animosity, and it is in both our best interests to work closely on land use planning.

Sometimes, however, I feel the government is the one dragging its feet when it comes to planning. All our dollars in this province come out of the ground, but like a cow, you can't keep taking milk out of one end without putting some hay in the other. In this case the hay is good land planning, and up to now the government has been very short with the stuff."

R. Stace-Smith
(Co-chairman of the Forest Land Use Liaison Committee and Chairman of the Conservation Committee of The Federation of British Columbia Naturalists)

"Before the committee was formed, communication of environmental matters was by confrontation. Environmental groups went to the media or to the government saying, 'Look at what those companies are doing'.

But today I can say without a doubt that the problems being raised by environmental groups are being addressed by the forest industry. In return, the environmental groups have begun to take a much broader interest in all aspects of forest land use.

At the committee meetings we deal more with principles than with specific issues. If we set ourselves the task of preparing a consensus statement on the question of the Stein, for example, we would probably fail. But overall we have come a long way. One of the major issues in the past used to be forest land access, now that's a non-issue.

I am concerned about one point, though — the costs to environmental groups for participating in groups like ours. If public participation is a worthwhile course in forest land management, the government should agree to funding these public groups."

Joan Zamluk
(Federation of B.C. Naturalists)

"The Forest Land Use Liaison Committee represents a great step forward towards the formulation of some sort of policy for integrated forest use, and it is by far the best thing we have to deal with land use planning. Also, I feel the committee will continue to evolve.

The environmental movement is so very young in this province. As a landscape architect, I worked on one of the first environmental studies ever done in B.C. — and that was only back in 1972. Five years is a short period of time to shift over into a program of integrated resource planning.

At the beginning, this planning process will be a frustrating time. That's because in the past the public has had its confidence shattered by both the forest industry and the Ministry of Forests. Both groups will have to rebuild that confidence, and the Forest Land Use Liaison Committee is a start in the right direction."

John Hasell
(Past-President of the Federation of Mountain Clubs of British Columbia)

"I'm not one who thinks 'compromise' is a dirty word. You can reach a compromise without sacrificing your own principles, and the Forest Land Use Liaison Committee is a place where these kinds of compromises can be achieved.

After all, the average forester is someone who himself enjoys the outdoors, and none of us would have access to most of

the outdoors without the logging roads.

Being pragmatic, and not expecting miracles, I have just been delighted in the way the committee has worked out. We have been able to resolve various thorny issues, and I can't think of one negative outcome.

Also, I feel the representation from the Ministry of Forests is invaluable in providing information and clarifying the factors upon which our analysis and decisions rest. It is imperative that they be there."

Maurice Ayers
(Vice-President, Pacific Logging Company)

"In effect, the Forest Land Use Liaison Committee acts as an advisor to government, which owns 95 percent of the forest land in B.C. However, the committee mainly represents coastal B.C., although its name might imply something different. I believe there should be three or four groups like ours throughout the province and especially in Prince George.

The main role of the committee is to provide the principles of land management, to provide statements of purpose. Then it is up to the actual land managers to find the best way to carry out those principles.

I do believe, however, that the government, as the primary land manager in this province, should have more of an active input into the committee. I feel that would definitely improve the workings of the committee."

Bill Young
(Assistant Chief Forester of the Ministry of Forests)

"Forest land use planning can be summed up in a set of twin objectives:

— The Province must maintain a viable forest industry, an industry that directly or indirectly affects everyone in this Province.

— The Province must also maintain a quality forest management, making it available to the whole range of forest users.

If you agree on both those objectives you have gone a long way in bridging the gap between people. Obviously, it is not acceptable to stop logging all across the Province, and it is equally unacceptable to ignore other resource users. The only sane alternative to these extremes is public dialogue.

At the Forest Land Use Liaison Committee perhaps as much as 80 percent of our differences are based on misunderstandings; they have nothing to do with one side or another being right or wrong on a topic. What was needed was to increase the flow of information."

Hugh Clifford
(Steelhead Society of B.C.)

"The Forest Land Use Liaison Committee operates at the ultimate level of the democratic process — decision by consensus, an exercise that imposes on all the difficult task of reconciling the aspirations of one's own special interest to the collective needs of all.

During the development of its Consensus on Watershed Management, I strongly urged the committee to adopt the word 'co-use' to replace the customary 'multiple use'.

'Co-use' recognizes the principles of a cooperative association in the use of our forests, whereas 'multiple use' by past experience, has meant nothing more than the opportunity of other forest users to avail themselves of whatever was left after the forest industry had satisfied all its needs.

Of course we recognize that the prime user of the forests is the forest industry — but we want them to know that we the public are justly here with our special needs.

At the Committee meetings there is no doubt in my mind every one is looking for something positive to come out of the discussions that will be for the benefit of all."

T. W. Trineer
(First Vice-President, Western Canadian Regional Council No. 1, International Woodworkers of America)

"The term 'forest industry' is often loosely and wrongly used to refer to forest industry *management*. But the workers should be recognized as part of the industry as well.

In the past, the union has tended to be suspicious of the motives of management, but if we agree with management on an issue we will go along with them hand in hand.

Management is interested in sustaining a yield of its product in order to make a profit, and the union is interested in sustaining a yield in the forest in order to ensure long-range employment. That makes both of us interested in effective land management, which is why we feel it is important for the union to be a part of the Forest Land Use Liaison Committee.

The committee is an important one because of its broad base of representation; surely people who are making the land management decisions should be listening to them. And even if the committee wasn't as broadly based as it is, it would behoove the union to sit down alone with management to discuss our common problems and make common representation on matters of land use planning."

Ken Farquharson
(Outdoor Recreation Council of B.C.)

"The primary objective of our own organization has been to get recognition for the values of recreation in land use planning, and where else but in the Forest Land Use Liaison Committee can you get to talk with top forest planners from MacMillan Bloedel and the Ministry of Forests?

At the moment the province has no coordinated over-all policy, and up to now, present land use patterns reflect the strength of the forest industry in the 1950s. The committee serves to highlight some of differing points of view on land use, and anyone attending the meetings comes away astounded by the lack of manpower available to our resource agencies to provide the necessary comprehensive and integrated planning.

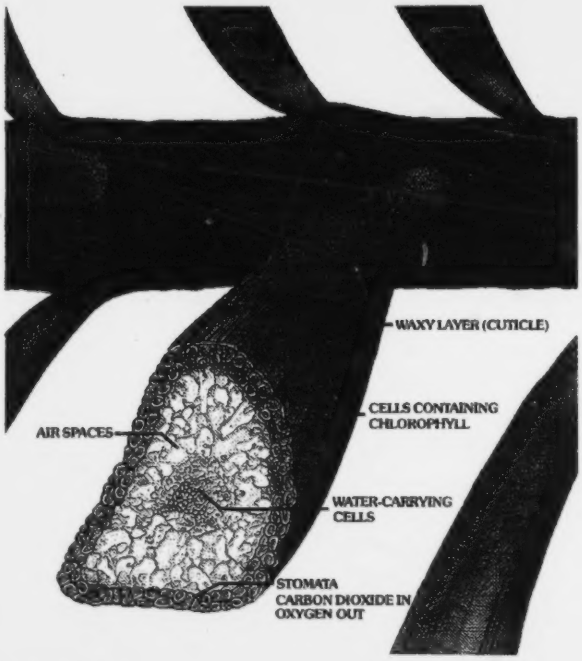
Basically, we all live in this province, and we'll have to come to terms with the key issue of land allocation. So how much better it is to develop a rational argument on the topic as soon as we can. If we talked land allocation within the committee, I think it would be very difficult to come to a consensus, but I don't think we shouldn't try.

After all, the essence of the committee is in the arguing, in the debating, and in the modifying of attitudes and in the process to achieve progress."

How a Tree Grows

Unlike people, trees do not grow from the bottom, but increase in height by growing up from their stem top and branch tips. Annual extension occurs only from these growing points. Similar to people, trees do experience annual growth outward. Together, these two growth habits give the tree its tapered form. The base of the tree is the oldest, has the greatest accumulation of annual diameter growth and is, therefore, the largest part of the tree.

Growth in diameter is most rapid early in the growing season, and the 'earlywood' produced at this time consists of large, light-coloured cells. The 'latewood' cells produced later in the season are smaller with thicker walls and so appear to be darker. Each pairing of light and dark bands composes one 'annual ring' which marks another year in the life of the tree. In discussions of tree growth, the living systems are emphasized. Worn-out and dead cells are a part of the story as well. Old phloem cells become a part of the outer bark and the protection system of the tree. As xylem cells die they fill with resin and harden to become part of the heartwood — the strength and reinforcement centre of the tree. From seed, the tree builds itself into a self-sufficient factory. The roots anchor the tree to, and absorb water and minerals from, the soil. The leaves manufacture sugar from the raw materials of air and water. Special tissues such as xylem and phloem transport water, minerals and food to various parts of the tree. The trunk takes care of support, maintenance and tree repair. The tree is a dynamic living system offering many benefits to people, animals and our whole environment.



Needles

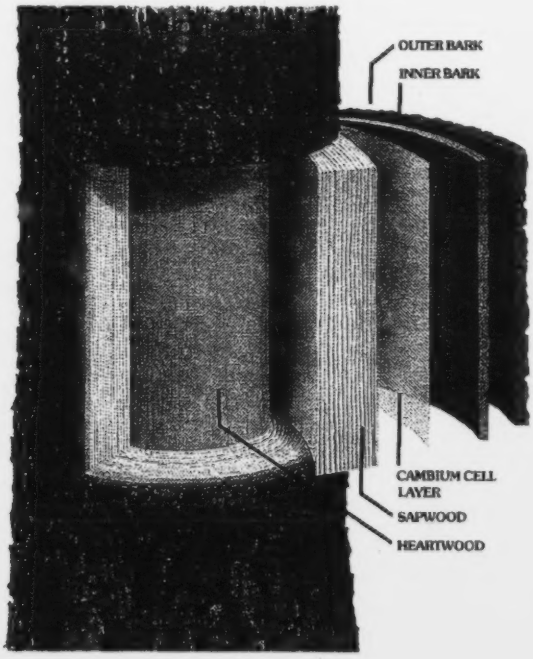
Needles manufacture the food or fuel that runs the total tree system. They do this through a process called photosynthesis, a chemical reaction carried out in the green 'chloroplast' cells. Driven by energy from the sun, water is broken down into hydrogen and oxygen elements, then recombined with carbon dioxide to form a simple sugar, and passed along to living cells to provide energy for their various activities. The excess oxygen is released into the atmosphere. Needles also house the breathing apparatus of the tree. Through tiny surface holes called 'stomata', the amount of air that enters and leaves the tree is controlled. Two 'guard cells' on either side of the stomata regulate the extent and duration of the opening, to obtain the amount of carbon dioxide needed for photosynthesis without permitting too much water to evaporate.

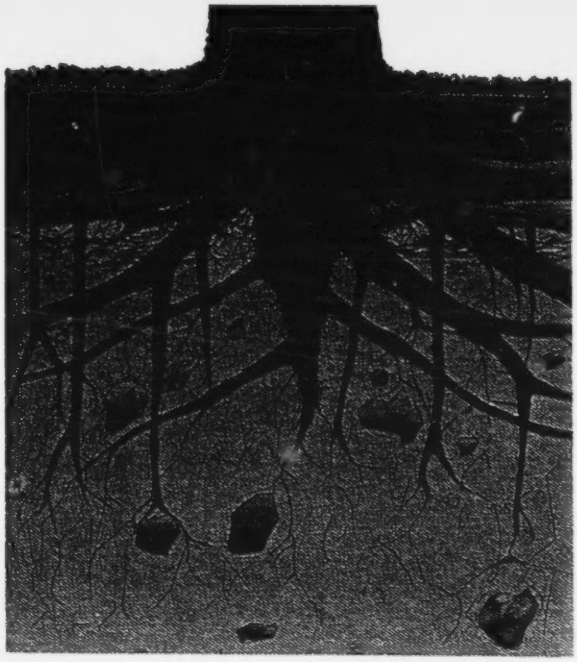
Trunk

If you were to unravel a tree, layer by layer, you would discover five layers each with a separate function . . . The OUTER BARK protects the tree from injuries, insects and disease, and insulates against cold and heat. The INNER BARK, or "Phloem", is the pipeline which carries food made in the leaves down to the branches, trunk and roots. It lives for only a short time, then dies to become part of the outer bark.

The CAMBIUM CELL LAYER is the growing part of the trunk. Each year it produces new inner bark on the outside, and new sapwood on the inside.

SAPWOOD carries water and dissolved minerals from the roots up to the leaves. As new outside layers of sapwood are added, the old inside layers die and become heartwood. The HEARTWOOD, though dead, gives the tree its strength.





Roots

A tree's root system serves two functions — anchoring the tree to the earth and absorbing water and mineral food materials from the soil. The first is performed by the entire root system, the second is restricted to the root tips. Development of the root system is proportional to development of the trunk and crown; the larger the tree, the greater the need for an extensive support and water supply system.

Just as the tree benefits from its root system, so does the soil. The horizontal and vertical branching of the roots holds the soil in place and protects it from erosion. The roots also create new pathways for animals, insects and worms that enrich the soil.

A PERSPECTIVE ON FOREST POLICY

by **Jean Sorensen**

PART 1 1900-1977

There is a saying: the more things change, the more they stay the same.

At one time, how well a family lived depended on how well it did in the local marketplace. Here in B.C., our standard of living still hinges on that fact. Only today, the marketplace is an international one and the products that sustain our economy are derived from our forests.

Studies have shown that in good years, wood products from our forest crop can account for two-thirds of British Columbia's exports and half of Canada's total wood exports.

Of the $7.2 billion in export sales that left B.C.'s borders in 1976, $4 billion came from forest products.

In other words, of every dollar coming into B.C. from exports, 56 cents can be attributed to the forest industry.

What does this mean in terms of jobs?

A forest industry survey which used 1972 as a sample year found that directly or indirectly, one out of every three persons in the work force depended on the forest industry. At least 250,000 jobs of the 879,000 available were related to wood production that year.

The generators of this wealth and employment are the forest companies on both a large and small scale. They gauge the international marketplace to determine the demands for pulp and paper, plywood, and lumber. With a sharp pencil they ensure that the prices of B.C. products are not out of line with those which other countries are giving the buyers.

Forest companies, though, operate under a unique circumstance in B.C. They do not own the forests and only obtain cutting privileges in various forms from the provincial government.

Today, the Province of British Columbia owns more than 90 percent of all our timberlands. According to the Sloan report, on a percentage basis, that is more government-owned land than is available to the industry in the U.S.S.R.

The province has an obligation to set forest policy to ensure that our major renewable resource is not mistreated.

On the other hand, the guidelines laid down by the government must be such that they allow forest companies to survive in an economic sense. Poor forest policy can erode our position on the world market, cause drastic unemployment, and cut back on the export dollars entering our province.

FOREST POLICY — A TOWERING ORDER

The rudiments of our forest policy can be traced back just over a century. As for specific forest management guidelines, it can be realistically said that they are only 30 years old. Only recently have we begun to develop extensive and intensive guidelines and management. By comparison, the first growth trees of B.C. are estimated to be between 200 and 300 years old. The second growth with which we are dealing more and more is between 70 to 100 years old.

Hard scrutiny of what we were doing in our forests did not really occur until 1910. Until then, the rights to timber had been committed under four different types of tenure and by railway berths which ensured railway development. Then, at the turn of the century, a timber stampede started. Lumber prices in Eastern Canada between 1900 and 1909 had risen 53 percent compared to the previous 10-year period and 93 percent between 1890 and 1900 in the U.S. Eastern timber barons had heard of our towering virgin stands and were eager to move in.

There was money to be made in B.C.'s forests. The provincial government of the day faced an overriding problem. While the requests for lumber were rushing in, there was no way to determine how much timberland the government had to dole out.

The provincial government's answer was to form a royal commission in 1910 headed by Frederick John Fulton.

"Forest statistics have been the wildest of guesswork...", Fulton commented in his report — revealing how confused was the whole timberlands issue.

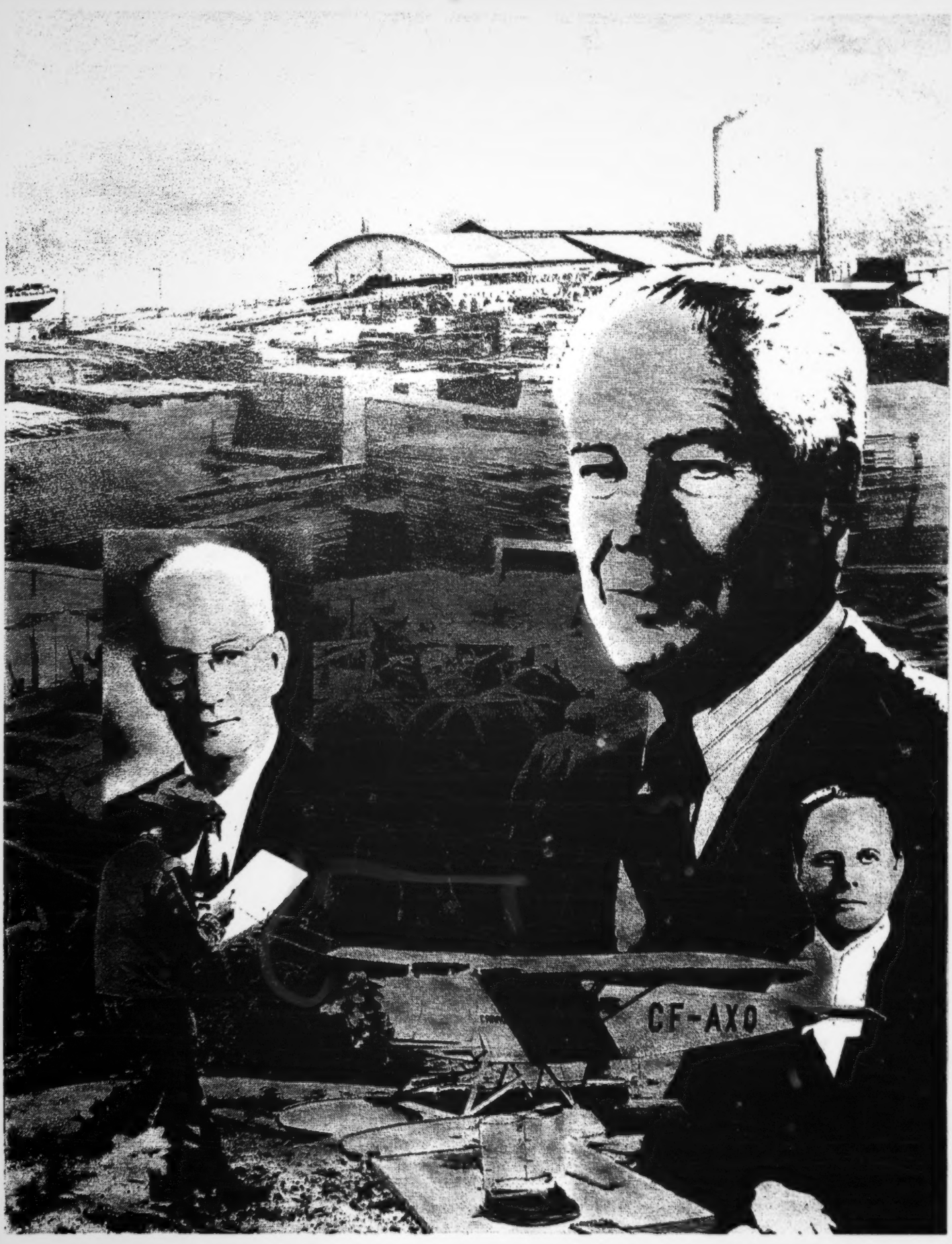
At first it was estimated that Canada had 320 million hectares of forest land. The foot-shufflers later reduced the figure to 250 million hectares. Then, Dr. Bernhard E. Fernow in 1907 made an extensive study of B.C. and estimated our province's timber wealth at between 12 and 20 million hectares.

Fulton considered all this and added his own estimate of 6 million hectares of merchantable timber. He cautioned readers that it was only an estimate and recommended that the government undertake its own inventory.

He also pinpointed other problems resulting from the indiscriminate method used in handing out forest lands. A single leaseholder may have had cutting rights to 2,000 hectares, but often this parcel was scattered in pockets over 10 or more different areas.

Operators were taking only the choice wood and leaving the mediocre and poor wood. It was the day of what many called the 'rape-ruin-and-run' logger. However, by that day's standards it was reasonable logging. Felling tools were basic, transportation costly, and logging highly dangerous. Under those circumstances, the logger who took two small trees instead of one large one was practising folly.

Perhaps this era of big-wood logging was even of some benefit since it was a very rough form of selective logging. It cleared off mature timber that, if harvested today, would not be worth marketing. (The forest industry today is still faced with the problem of logging overmature timber with rotting cores. These areas also become breeding places for disease and pests as well as potential fire hazards.)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The speculator is an ageless phenomenon in any industry, Fulton observed in his report. Shrewd timbermen were acquiring prime timber tracts and sitting on them in anticipation of lumber prices leaping even higher.

In total, Fulton found that the province had doled out two-thirds of the merchantable timber in various forms and what was left were the vast inaccessible and uncharted areas, known lands in reserve, and of course, the areas between the choice spots of timber.

An inventory in depth, better industry checks, and a firmed-up policy on delegating lands plus the creation of a forest service was the general thrust of Fulton's report.

The Forest Service sprang from the subsequent 1912 Forest Act and it was empowered with the authority to manage and protect our forests.

BY FOOT AND BY HORSE – THEY COUNTED TREES

Millions of acres of forest land stretched over B.C. and from the early beginnings of the Forest Service there was a compelling drive to inventory B.C.'s wealth in terms of merchantable wood.

Marc Gormely, a Forest Service employee from 1927 to 1952, participated in the inventory drive.

"It was the first concerted, planned inventory," recalls Gormely, now retired from his own Vancouver consulting firm. "Others had been based on rumour, information from trappers and the occasional reconnaissance."

The major work was done by chief reconnaissance officer John Collins. According to Gormely, "There were vast tracts of forest land much of which we knew little about. Collins would go into these areas by horse and just ramble."

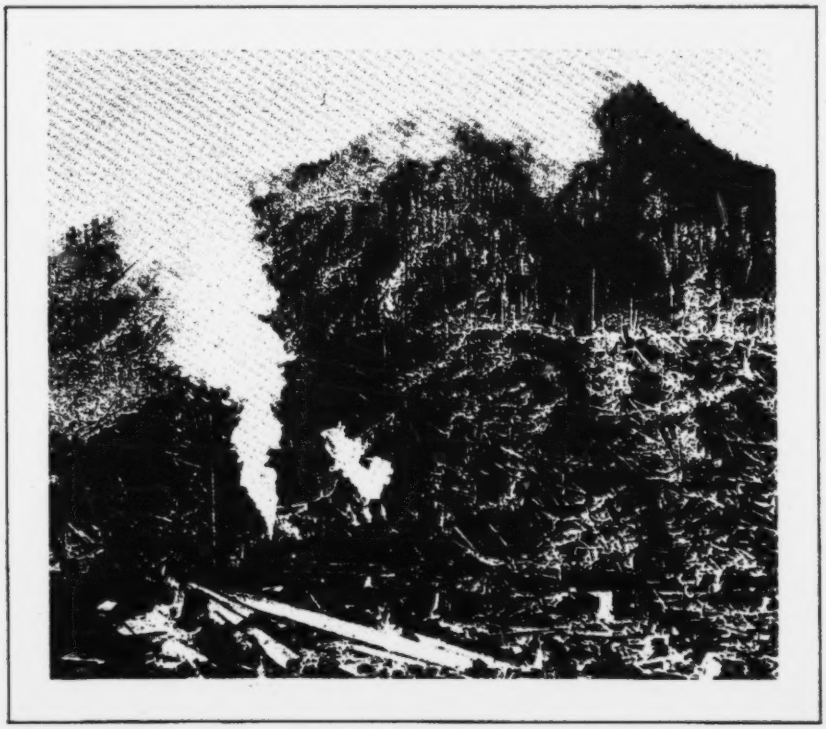
Gormely remembers receiving orders to cruise timber on a coastal island. According to the distorted map he had been given, at one point he should have been a quarter mile out in the ocean. The Forest Service wasn't the only government agency short on information in those days.

An ambitious Forest Service surveyor, Jerry Andrews, heard of a method of aerial surveying called photogrammetry, went to Europe to study it, and returned to B.C. to foster that science.

The need to know the extent of B.C.'s timberlands was becoming more and more pressing. Not only were loggers and sawmill operators wanting more wood, but a pulp and paper industry was gaining momentum. Between 1909 and 1923, eight pulp operations had been opened on the coast. Harvest records for 1912 show that log production was 67 million cubic meters, but by the later 1920s, it had more than doubled to 141 million cubic meters.

Finally in 1937, 25 years after the inventory started, F. D. Mulholland issued The Forest Resources of B.C., which recorded 26 million hectares of productive forest land.

Today, we estimate our usable lands at twice that. Although only one-seventh of the total area of forest lands are on the coast, the area supports 41 percent of B.C.'s standing timber.



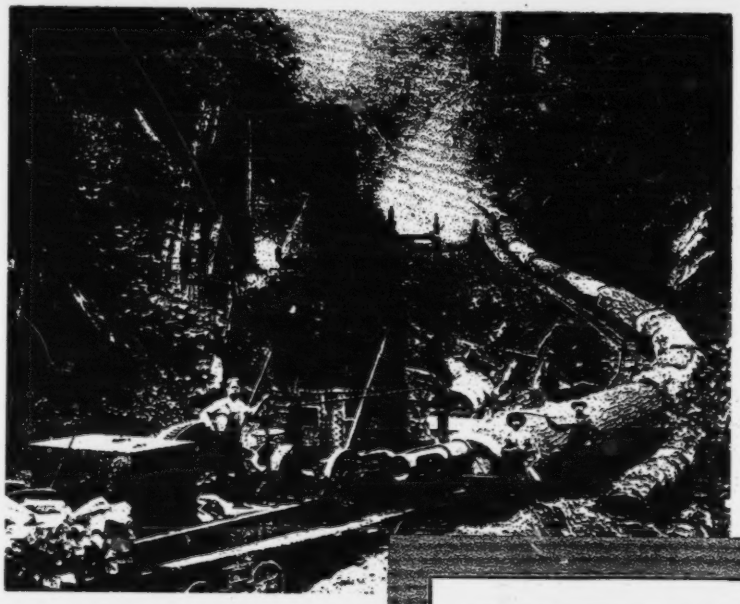
SUSTAINED YIELD – A YARDSTICK FOR CUTTING

Dr. C. D. Orchard, Chief Forester from 1941 to 1947, is credited with being the founder of modern forestry practises in British Columbia. For years he had been pondering futuristic questions, such as how we could ensure that there would always be a forest that would ensure our place on the world market?

Equally distressing was the fact that communities were springing up around large cutting areas. If these areas were depleted, the communities would die. New tracts of land would have to be opened. In essence this move would amount to the old rape-ruin-and-run situation on a more sophisticated level. Communities would drift away after the operators' new-found timber reserves outlined in Mulholland's report would eventually be depleted, and the economic result for a province already heavily reliant on the world market would be disastrous.

Cutting had to be controlled, but what was the yardstick? The scheme Orchard hit upon was called sustained yield. If a certain area took 80 years to grow a stand of trees, the annual harvest would be restricted to 1/80th of the crop.

Sustained yield in comprehensive theory was first set out by Judge Gordon Sloan in his royal commission



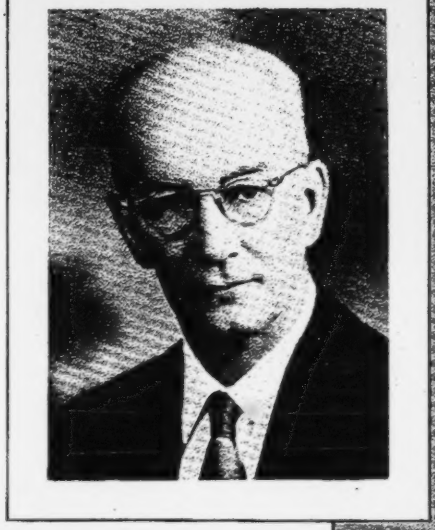
(Opposite page) By the turn of the century, steam powered skidders such as this one, pictured with a separate loading machine, had replaced horses.

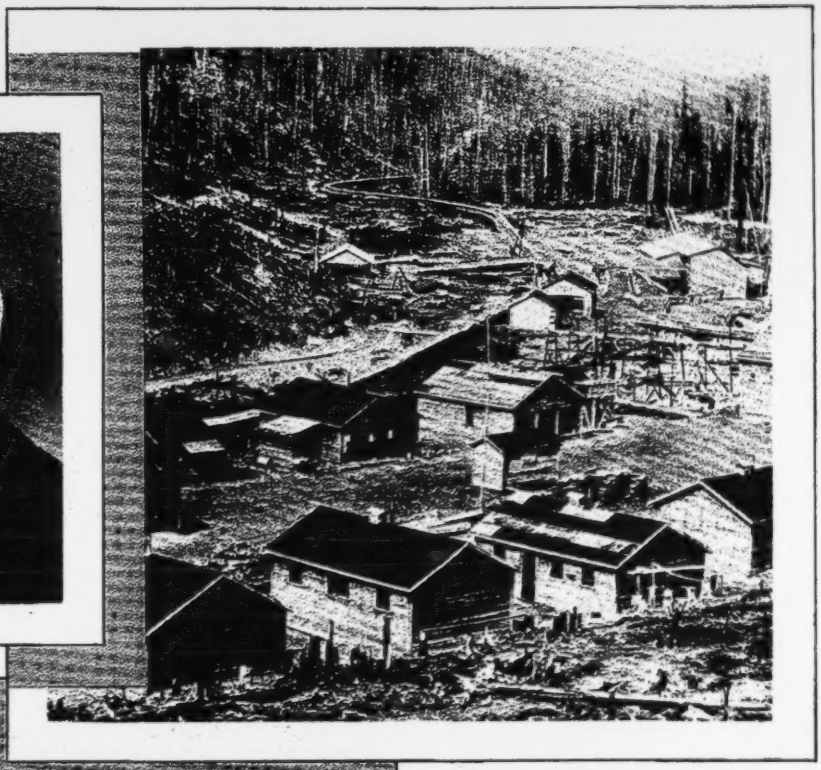
(top left) In the early 1800's primitive equipment such as this "Walking Dudley", was used to transport logs.

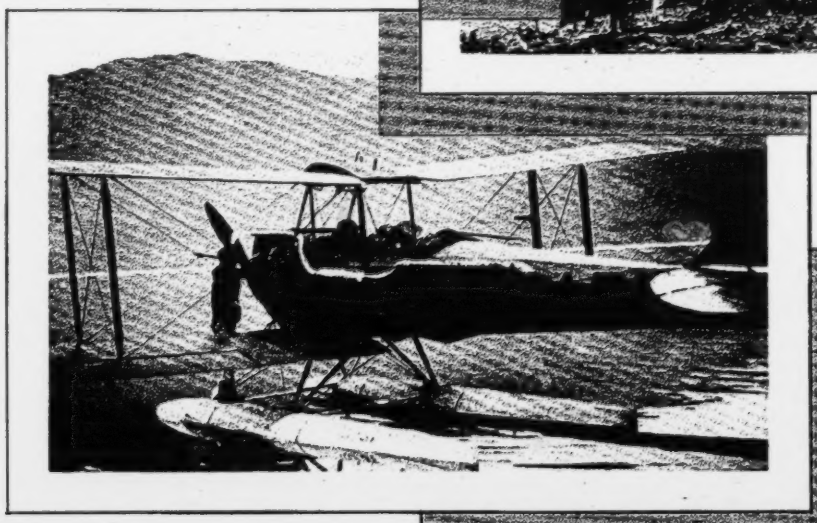
(middle left) Spending most of the day on "springboards", these early fallers had just finished making their undercut on this large Douglas-fir.

(below) Little thought was given to safety in this old mill. Cedar logs are being sawn into blocks and the back removed by saw prior to shingle weaving.

(bottom left) A Forest Ranger, his staff and equipment, leaving his station near Hazelton in 1914.







(top left) Dr. C.D. Orchard, Chief Forester and Deputy Minister of Forests 1941-1957.
(top right) B.C. Spruce Mills Ltd., near Pemberton.
(above) Gypsy Moth biplanes, such as the one pictured here, were used for reconnaisance in 1935.
(bottom right) U.B.C. forestry students learning how to transplant seedlings at Green Timbers Nursery, near Vancouver, 1931.
(opposite page) Chief Justice Gordon McG. Sloan.

report on forestry in 1943. The ideas were Dr. Orchard's, according to Lorne Swannell, Chief Forester of the Forest Service 1965 to 1972.

The timber areas to be managed under this new concept were broken into two types: Public Sustained Yield Units (PSYUs) administered by the Forest Service and Tree Farm Licences (TFLs) administered jointly by the Forest Service and industry.

PSYUs in the province now cover nearly 32 million hectares or 60 percent of all forest land.

THE SURVIVAL OF THE EFFICIENT

The largest impact of sustained yield was that it caused the forest industry to become more efficient. Timber was on ration and the operator who could get the most value out of a piece of wood was the one who survived.

In B.C.'s interior, sawmills honeycombed the woods. Swannell remembers them as "inefficient peckerwood mills" and around Williams Lake in the early fifties, there were at least 100 sawmills "busily wasting wood."

There is nothing to suggest that the larger operator is more efficient than the smaller one. But, in the Interior, there was a pattern emerging. When there was not enough timber to go around, "the larger companies started buying out the smaller companies," Swannell recalls.

This process of larger companies taking over smaller ones was a pattern that B.C. would see emerging again and again as timber became more dear and competition on the world market became stiffer.

Tree Farm Licences had started out as a good idea, but by the mid-1950s, they had become a hot issue. Forest companies clamoured to obtain these wood units that were granted in perpetuity. In addition, the companies had complete charge of management. In essence, it was a golden opportunity for a company to lock up a private timber estate.

When Judge Sloan took the chair to head the third royal commission in 1956, he recommended that there be changes. TFLs were made renewable on a 21-year basis and the Forest Service became more involved in regulating the licencee's interest.

THE WORLD CAME

During the second Sloan commission, the government of W. A. C. Bennett changed forest ministers. Ray Williston, a Prince George school teacher, moved into the position he would hold until 1972.

Williston, now head of B.C. Cellulose, is recognized as evolving two sets of policies: 'use it or lose it' and 'close utilization'.

'Use it or lose it' was simply Williston's message to the forest companies warning them that they had to use every scrap of timber possible or be refused future timber rights. He wanted performance that had never been seen in the industry. "Performance not only in use, but also in recovery of waste material," Williston says.

At first, industry was reluctant to change. But change it did, as Williston stood firm. Change was most noticeable in the Interior where the use of barkers, chippers and methods of log handling leapt forward.

"They (interior operators) achieved a level of expertise that was neither matched on the Coast nor anywhere else. They were the forerunners of close-utilization on a group level," Williston remembers.

Williston was confident that the industry was upgrading until one day in the 1960s when Tom Wright, later a University of B.C. Forestry dean, walked into his office and announced the industry was only using 25 percent of the wood on an acre.

"You are out of your mind," Williston fired back. "No one operates a resource by leaving 75 percent as waste."

Harold Moffat, now Prince George's mayor, was chairman of the local Industrial Development Board at that time. The board offered $200 to Industrial Forest Services Consultants to test Wright's theory and it was Forester Larry De Grace who proved it out.

If the sawmills couldn't handle this 75 percent scrap, what about chipping it and using it in the pulp industry, Williston thought?

"The pulp industry said it was crazy to attempt to establish an industry on waste residuals," Williston says. Pulp mills at that time had been used to receiving roundwood and chipping it themselves.

Canadian Forest Products, one of B.C.'s major forest companies, came forward with the money needed to test Williston's theory in 1962.

Pulpwood Harvesting Areas (PHAs) were established. They were basically several sustained yield plots pushed together with a government guarantee of timber, if the residuals could not sustain the pulpmills. They imposed a pulp economy over the existing one of sawmills. There are five PHAs in B.C. today; three near Prince George, one near Quesnel and one near Kamloops.

"I figured we could have maybe five years to work out all the problems under the PHA arrangement," Williston remembers. No such luck. Industry recognized a good opportunity when it saw one.

Five years later, Prince George Pulp, Northwood, Weyerhaeuser, International, Cariboo Pulp, Crestbrook, Eurocan, and Skeena Kraft (now Cancel) were established.

The policy brought in money from Japan, the U.S., Germany, and the Scandinavian countries.

"The world came," Williston says.

THE BUBBLE BURSTS

Williston was not a man who believed in royal commissions and the sixties passed without one. He had a basic philosophy, "You have to create an atmosphere in which something can happen. The other things will fall into place."

B.C. moved into the seventies and

things were definitely happening. There was a boom. Better still, B.C. had a solid reputation on the world market for good wood. Her engineering expertise was in demand throughout the world for forestry complexes. B.C.'s rugged terrain logging equipment ranked with the established world leaders.

As the boom increased, one of the basic laws of economics came into play — no one ever has enough and everyone wants more.

Rapid prosperity caused an increase in pollution of B.C.'s air and water. Costly multi-million dollar pollution control projects were undertaken and more stringent future guidelines laid down.

Industry wanted more productivity, more wood, less government intervention, and better prices on forest products.

Labour was flexing its muscles. They wanted more support from government and better wages and consideration from industry. Wages were already surpassing those of the U.S. while 'strike' and 'wildcat' became familiar words in our vocabulary.

Equipment costs rocketed. A small operator had to pay at least $1 million to get into the logging business. The small logger was complaining that his only role these days was to contract out to a major operation.

Perhaps the greatest indicator of trouble was the increasingly lower grades of timber being made available, coupled with more expensive and difficult harvesting techniques.

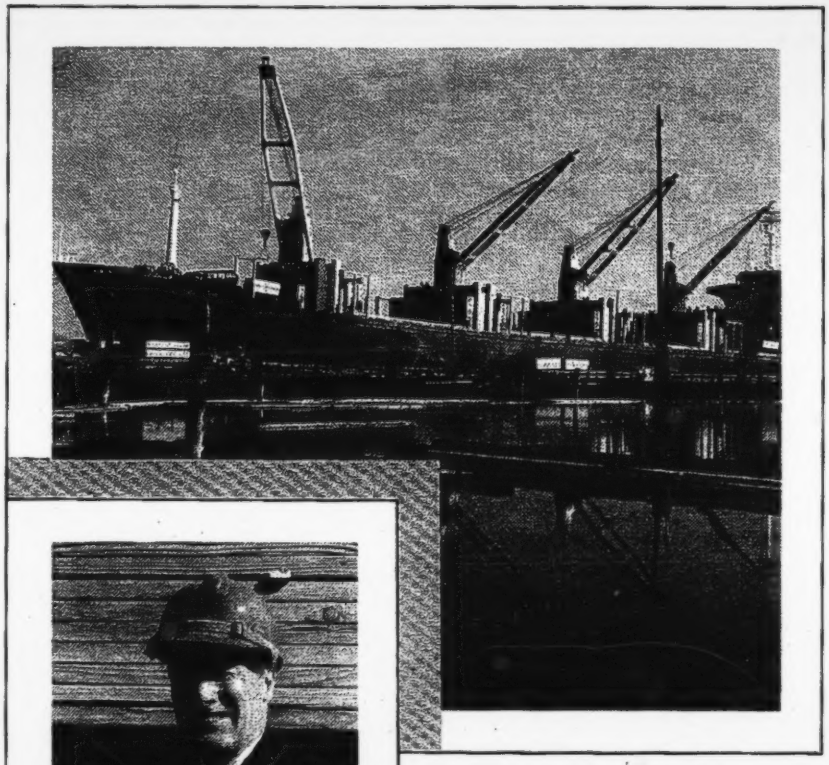
Then, in late 1974, the bubble started bursting.

The world was moving into a recession and the marketplace no longer wanted vast quantities of wood. The lumber market collapsed in 1975 and pulp and paper slid down the tube shortly afterward.

Instead of fighting for a larger cut of the profits, the fragmented industry began struggling for an existence. High labour costs, costly upgrading programs, environmental guidelines, and high equipment costs all had to be reflected in our wood prices on the world market.

It became increasingly clear that B.C.'s position on the market was experiencing competition from many of the same countries that had bought B.C. expertise and technology.

The world market would recover. But, there was no guarantee B.C. products would have priority on the market. The province's timber base was also changing from first to second growth.



(above) The freighter "Van Triumph" loading lumber in Cowichan Bay.

(left) Ray Williston, former Minister of Lands, Forests and Water Resources, 1956-1972, now Chairman of the Board and President of B.C. Cellulose Ltd.

While a provincial government cannot control international pricing set through competition, it can ensure that the operating rules it sets down for its home industries ensure a chance of survival.

Were the complaints of the industry justified? Could the environmentalist live side by side with the logger? Was there a role for the small logger? Could we guarantee the future growth of B.C. resource-oriented communities? What of forest policy? Was it outmoded?

One thing was known. Never in the province's history had so many depended so much on the economic viability of the forest industry, and never had the challenge of moving into the eighties against such stiff competition been so great.

On June 12, 1975, the provincial government announced a long overdue review of its forests and industries. Dr. P. H. Pearse, a UBC forest economist, was appointed as the sole commissioner.

Before Dr. Pearse would finish his inquiry, the transcript of testimony would cover more than 10,000 pages and his final report would number more than 400 pages.

Editor's Note

What were the basic findings of Dr. Peter Pearse and what has happened to his recommendations? Next issue, ForesTalk looks at our move into the future and the forest policy of tomorrow.

It looks at reestablishing B.C. on the world market, and what demands and concessions the government will make on industry, labour, communities, and environmental groups.

Meeting the challenge of the 1980s will mean a more efficient Forest Service, a new emphasis on intensive forest management, gaining the edge on competition, and marketing second growth timber.

Letters to the Editor

Letters to the editor provides an opportunity for our many readers to discuss topics arising out of ForesTalk, its contents, its aspirations, and its areas of interest. Letters for publication must carry name and address. Views published are not necessarily endorsed editorially.

ForesTalk magazine is definitely the kind of useful and informative information people like myself want to see our tax dollars spent on.

Gord Price's article on Streamside Logging was excellent. If the basic concepts were followed in all cases by all logging operators, our entire ecological system could be protected for years to come.

D.C. Fleming
Vancouver, B.C.

Regarding your Feature Article on "Damaging Deadheads", I am quite surprised that COFI has difficulty in raising the relatively modest funds required for planned improvements in the next couple of years.

Since the Federal Government has not been keen on participating why not approach small boat operators both pleasure and Commercial fishermen of whom there must be thousands in the immediate Vancouver area; a small donation from each of these operators should take care of the deficit quite easily and in the long run (or the short run for that matter) should very quickly return their "investment". For one thing their insurance costs should taper off very quickly.

I would like to compliment you on the very interesting articles in your magazine and would like to continue to receive it.

R. A. Gibson
Salmo, B.C.

May I, through the pages of your publication, bring to the attention of your readers the existence of an autonomous two-year Forest Resources Technology Programme at Malaspina College, Nanaimo.

Modelled originally on the successful programme at B.C.I.T., Malaspina's programme, with the help of a strong advisory committee is seeking to graduate forest technologists who are completely prepared to meet the challenges of "Forestry" in B.C. today.

Students for the programme are drawn mainly from Vancouver Island, but include people from the rest of B.C. and occasionally one or two from other provinces. All applicants are personally interviewed by members of the Forestry Staff before the class selection is completed.

The second year class spends a great deal of time applying the basics learned the previous year in projects such as assessment of logging waste, root rot, surveys, reforestation, thinning, road location, etc. Many of these are carried out in conjunction with the Forest Service and with local forest companies.

This class will also take the two-week basic logging course offered by the vocational division of the college. During these two weeks the students learn the basics of highlead rigging and yarding using the college's spars which contract log in Crown Zellerbach's Nanaimo Division.

The forests of the interior of the province are not forgotten. During a trip through the interior, differences between coastal and interior forests are emphasized and the relevant methods of harvesting, protection, silviculture etc. are demonstrated.

Instructors in the programme are registered professional foresters and have a considerable range of field experience between them. Some have also had former teaching experience that includes B.C.I.T. and U.B.C. positions.

The goal of the programme will be to graduate a maximum of 25 students annually. With such small classes, the low student: staff ratio becomes a key point in ensuring that each student has the opportunity to benefit as much as possible from the programme.

D.A. Smith, R.P.F.
Co-ordinator
Forest Technology

ForesTalk is becoming a very reputable magazine. It has tackled hard issues such as wilderness and wildlife preservation and in my opinion deals fairly with both sides. Lately I have been hearing about the Southern Moresby Wildnerness Proposal on the Queen Charlotte Islands. I wonder if ForesTalk is going to feature an article in the near future about this area and the resource conflicts involved?

S. Green
Victoria, B.C.

Not only the Southern Moresby Wilderness Proposal, but the entire Queen Charlotte Islands issue is one we are researching for possible publication at a later date.
Editor

ForesTalk is indeed an informative and well compiled British Columbia magazine.

In your last issue (page 21) you mentioned eight reasons for a greenstrip and other considerations. All are excellent, however, after many years of careful consideration and observation of our spawning streams on the B.C. coast, I would strongly suggest that all streams come under the greenstrip regulations.

Considering the unemployment situation at the present time, our Federal Department of Fisheries should provide sufficient funds to pay for the clean-up required on the vast majority of spawning streams in B.C.

L. Phillips
Vancouver, B.C.

Last summer, the federal government, in co-operation with the B.C. Ministry of Recreation and Conservation, authorized a massive salmonid development program in British Columbia, aimed at more than doubling the annual production of Canada's Pacific salmon.
The first five-year phase of the program will cost approximately $150 million. The second phase of the program, extending from the sixth to the fifteenth year, could see an annual investment in enhancement ranging from $30 to $60 million.
By applying a carefully selected mix of proven enhancement techniques, ranging from the rehabilitation of impaired natural habitats to such man-made aids as artificial spawning channels, hatcheries and fishways, the fisheries experts expect to achieve their goals of expanding recreational opportunities and doubling to $400 million the value of the annual commercial salmon production in the 1990s.
Participation by conservation groups, service clubs, schools and individuals in projects such as stream clearing and local watershed improvement schemes, will be an important part of the overall program and could be a key factor in restoration and improvement of the hundreds of small streams on which such salmon and trout production depends.
If you have ideas for specific enhancement projects or thoughts about the future of our fishing industry, sports fisheries and fish-supporting streams, write to: Public Involvement, Salmonid Enhancement Program, 1090 West Pender St., Vancouver, B.C. V6E 2P1.
Editor

Please include me on your mailing list to receive future copies of ForesTalk. I am presently preparing myself for a course on forestry when I get out of prison, and would be most grateful for any assistance you could handle.

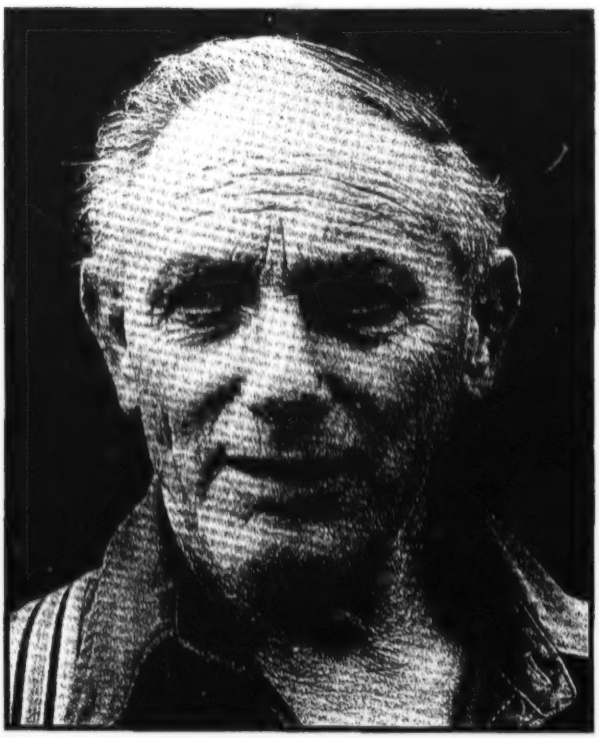
E. Rathbun
Agassiz, B.C.

People

Dick Treherne

by **Ray Wormald**

I'm as close as any man can be to nature . . . here I am at peace with myself and at peace with the world.



Long ago, for no recorded reason, it was customary for cabin boys serving with the Canadian Merchant Marine to be called "Peggy."

That tradition was temporarily snapped by one Richard Henry Treherne. The year was 1923 and Dick was a husky young man in his fifteenth year. He was practically all muscle and his strength had been reinforced with training as a boxer.

Family finances had dictated that he leave school at 13 and get a job. The first one saw him pushing logs around for the Fraser River Logging Co.'s operation at Courtenay on Vancouver Island. He made 25 cents an hour.

A year later he joined the merchant marine and packed his bag aboard the 10,000-ton freighter *Canadian Winner,* operating out of Vancouver and carrying British Columbia's prime lumber to ports around the world.

He had signed on as the ship's cabin boy, and the first time he was called "Peggy" was the last time. The crewman, who was only continuing a tradition, felt a strong hand by the scruff of his neck and a voice which firmly announced "there's not a man here who can call me Peggy."

The episode was symbolic of Dick Treherne's spirit of strength and independence which prevails to this day. And that's why practically all of his 69 years have seen him working in the great outdoors.

He was only 18 months old when his family moved from his birthplace

in Southampton, England, to Canada. They spent a year in Enderby in the Okanagan where Dick's uncle, Charlie Hawkins, served as mayor for about 40 years. Then they moved to Vancouver Island and spent time in Parksville, Victoria and the Comox Valley.

A year at sea with the merchant marine was enough. Dick loved the sea, and still does. "But I was never meant to be a sailor . . . even now I get seasick just walkin' over a rough floor!"

For a while he worked with the Powell River Company, falling snags left in the wake of a devastating forest fire. By 1926, Dick was tired of working for wages. He formed a partnership with one George Harbidge in Vancouver and together they cleared land for a large subdivision project in Burnaby's Capi*al Hill district. Later they went to Port Moody to cut pulpwood for $2.65 a cord — a good day seeing them cutting, peeling, splitting and piling over two cords.

Following years saw Dick clearing land in the Fraser Valley, placer mining at Forty-Nine Creek in the Nelson area, selling sewing machines, working on a ranch, and prospecting for gold some 290 kilometers north of Vanderhoof. "It didn't pan out!"

By 1932 he was back in the Comox Valley on Vancouver Island . . . this time using a crosscut saw to fall tall cedars, and hand-split shakes. It was the middle of the Great Depression. He made $5 for every 1,000 shakes produced. Times were tough. He slept in the bush where he worked.

By early 1935 Dick Treherne was falling trees for the Hall, Brackett and Ployart Company in the Johnstone Strait region. Later that year he met and married Helen Mackey, of Vancouver. Their first "country home" was a small cabin carved out of heavy wilderness with roof and walls fashioned from cedar shakes. He saw that cabin a year ago and "it's as solid as the day it was built."

A year later a disastrous fire wiped out practically all of the H.B.P. holdings, buildings, timber supplies, everything. The firm had no money, but Dick was "paid off" with groceries which included a huge slab of bacon . . . "and it turned out to be bad!"

The couple went to the Nootka area of Vancouver Island's rugged west coast where he worked in a gold mine named Danzig, did some logging, and operated a grader for a while. Early in 1939 they moved to Oyster Bay, some 14 kilometers south of Campbell River, and built the house which has remained their home to this day. It's located a stone's-throw away from some of the finest waterfront property to be found anywhere in B.C. And the salmon fishing is still good.

Things were different then. The large lot cost $250, and all the material needed to build the house totalled $280. The taxes were $9 a year, "and we lived like kings on $25 a month."

Initially Dick worked for the British American Timber Company, which was operating in the upper reaches of the turbulent, winding Oyster River. When that job ended he changed his work pattern. He went commercial salmon fishing during the summers, and during the winters returned to logging and construction.

Early in the 1950s he settled into the shake-splitting business on a full-time basis and he's still at it.

His operation is about 40 kilometers into the heart of mid-Vancouver Island in a second growth area which was ravaged by fire many years ago. Throughout this new forest, now lush and green with healthy stands of young Douglas-fir, there are still the stumps and stems of ancient western red-cedars which somehow survived the blaze of decades ago.

The veteran shake-splitter describes most of them as "stove-pipes" — rotted and hollow throughout the core, but still with a circle of solid wood. Some of these cedar giants were 500 years old when the big fire struck.

Dick's equipment consists of a small bulldozer with which he pushes or pulls logs, a four-wheel drive truck, a good chain saw, a variety of axes and wedges, several specially made hammers (or clubs) which are made of lead, plastic or hardwood, and a number of froes. In case you're wondering, a froe is a cutting tool with which the shakes are actually split from the block. It has a long and fairly sharp blade with an upright handle at one end. The top edge of the froe is not damaged by the softer "club."

Strong wire is used to package the shakes into bundles, with four bundles making up what is called a square. One square contains enough shakes to cover 9 square meters of roof. Superior shakes are 60 centimeters long, while those of slightly lesser quality are 45 centimeters. They range in thickness from 12 to 18 millimeters.

Not too many years ago cedar shakes were selling for around $10.50 a square. Today they bring upwards of $55. This jump in price is due to several reasons: cedar contains a generous amount of oil which serves effectively as a preservative, and in a proper setting, a cedar shake roof (and exterior walls) is aesthetically pleasing. A good and properly applied shake roof will be trouble-free for thirty years or more.

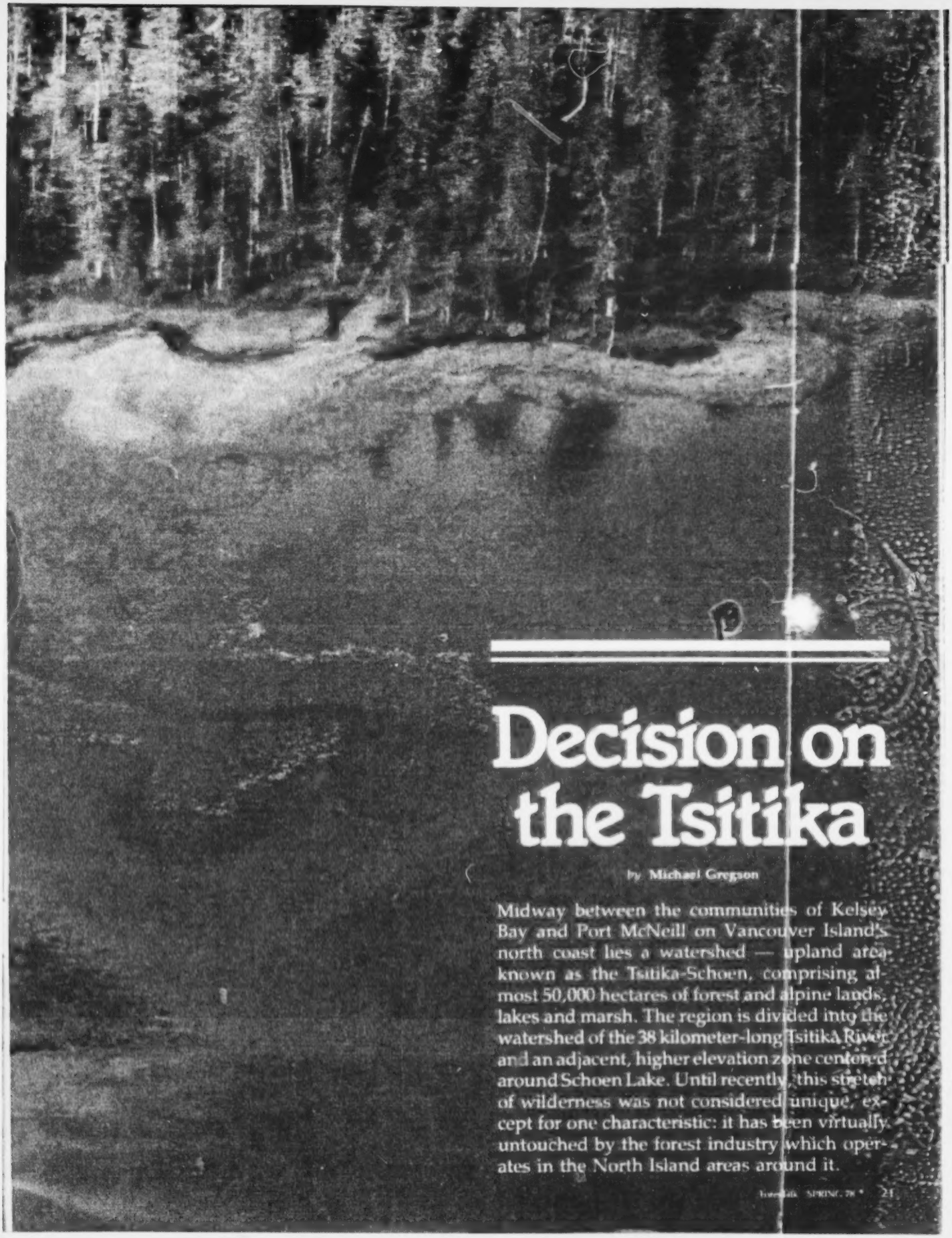
Dick Treherne, who can't keep up with the demand for his product within his immediate home vicinity, says cedar shakes have become "almost a fad . . . you might even say a status symbol."

And hand in hand with the ever-increasing demand there is also a shortage of the raw material. Good, clear, straight-grained red cedar is becoming increasingly more difficult to find. Its scarcity and resultant value have even led to "hijacking" incidents in the Campbell River area. There have been assorted reports of cedar thefts.

Apart from the fact that it provides him with an income, the business has other values for this rugged outdoorsman — "values you just can't label with a price tag."

"Out here," says Dick Treherne as he stands among the tall trees, "I'm my own boss . . . I'm as close as any man can be to nature . . . here I am at peace with myself and at peace with the world." ◻

photographs by Jim Challenger



Decision on the Tsitika

by Michael Gregson

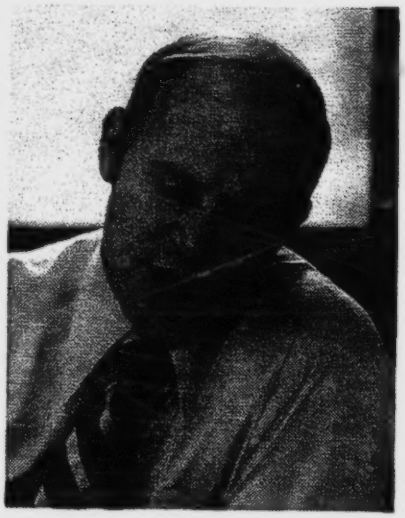
Midway between the communities of Kelsey Bay and Port McNeill on Vancouver Island's north coast lies a watershed — upland area known as the Tsitika-Schoen, comprising almost 50,000 hectares of forest and alpine lands, lakes and marsh. The region is divided into the watershed of the 38 kilometer-long Tsitika River and an adjacent, higher elevation zone centered around Schoen Lake. Until recently, this stretch of wilderness was not considered unique, except for one characteristic: it has been virtually untouched by the forest industry which operates in the North Island areas around it.

The almost virgin condition of the Tsitika-Schoen contributed strongly to the suggestion made in 1972 by the late Fish and Wildlife Biologist Ian Smith that the Tsitika-Schoen be placed under protected status as an ecological reserve. The biologist and the Ecological Reserves Committee which supported his idea saw several benefits in this status. Chief among them was that as an ecological reserve the area would serve as a "benchmark" zone for comparison in timberland management policies then in use. Much more knowledge is still needed about the life patterns of many large mammals and fish inhabiting forested areas. One school of thought among researchers is that valuable insights into animal and forest ecology will be obtained if future studies can include reference to undisturbed habitat conditions such as could be seen in the Tsitika drainage and associated areas. The Tsitika offered opportunities in this area of study as an aid to studying the effects of logging upon an ecosystem.

Supported by preservationist groups long interested in a park proposal around Schoen Lake, Smith's proposal was forceful enough for the provincial government to place a moratorium on logging in the proposed reserve area in February of 1973. The moratorium prohibited logging in the watershed of the Tsitika and areas adjacent to Schoen Lake, but allowed logging activity to be carried out in the rest of the zone where prior approvals had been given.

The great surge of public interest which developed out of this proposal, and the focusing on how best to make use of the area, comprised the Tsitika-Schoen controversy. On October 28, 1977, the Environment and Land Use Committee (ELUC) made public its decisions on the utilization of the moratorium area — five years, almost to the day, of trying to resolve a knotty problem of multiple land use. Although the whole dispute appears to be a local Vancouver Island issue, the ELUC decisions embody a methodical approach to complex multiple land use issues, the implications of which are province-wide.

(previous page) Estuaries, like the one pictured here at the mouth of the Tsitika River, are biologically the most productive areas on Earth. One of the seven Ecological Reserves proposed for the Tsitika will cover this valuable estuary.



(above) Ray Ostby, Co-ordinator of the Tsitika Resource Plan.

To appreciate how difficult and full of import are ELUC's decisions, let us take a closer look at the history of the Tsitika-Schoen argument.

Having instituted the moratorium, the provincial government commissioned consultant Howard Paish to co-ordinate a study of the area. Popularly known as the Paish Report, its objective was to outline types of public use and come up with various land use options accounting for those uses. The report, issued two years later in February of 1975, was then taken by the government as the basis for a series of public hearings convened to discuss these options and the problems associated with them.

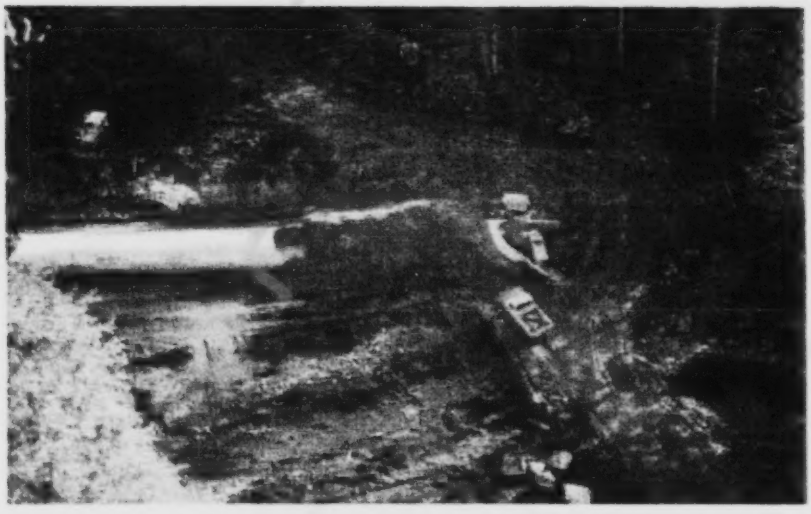
Held in four Vancouver Island communities, the hearings addressed the problems of multiple land use. They were attended by three contending interest groups: industry, preservationists and local residents. The companies were MacMillan Bloedel, Canadian Forest Products, and Rayonier, who together held the moratorium area in their Tree Farm Licences. Rayonier was only a small holder compared to the others. All three had long-term logging plans stopped or restricted by the moratorium. The preservationists were composed of individuals, local natural history groups and societies of provincial outlook such as the B.C. Wildlife Federation and the Sierra Club. Finally there were the residents of the North Island area, including the IWA, regional boards and concerned individuals.

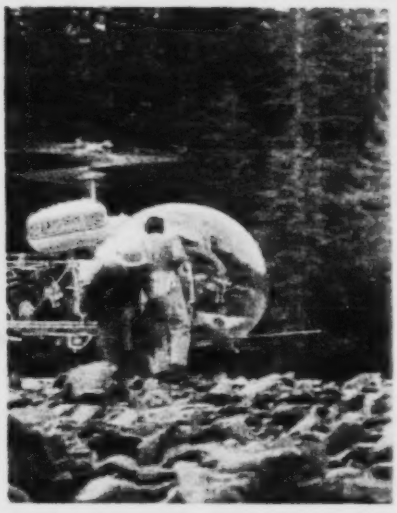
These parties met to consider four options outlined by Paish, none of which were to be taken as final choices. Options 'A' and 'B' were the "extremes." 'A' suggested industry would continue as a prime user as had been planned. 'B' suggested complete preservation as had been proposed. Options 'C' and 'D' were compromises of the first two. Option 'C' indicated that Schoen Lake and the adjacent area be made into a park. Certain areas near the lake were to be lifted from the moratorium, while the Tsitika watershed itself was to become a permanent benchmark area. Option 'D' differed from 'C' only in treatment of the Tsitika's watershed. Within that zone, smaller benchmark areas were to be identified. While this was being done the watershed was to remain under moratorium. Also, an institute for research in these benchmark areas was to be set up to co-ordinate the land management studies contained in the original Smith proposal.

Feeling that Option 'A' did not represent the environmental protection practises of modern timber harvesting, the companies prepared a fifth option — Option 'E'. Contending that industrial activity in the area was not only essential for the economy, but could also be done without serious damage to the environment, Option 'E' outlined a plan whereby areas for parks and for preservation were to be built into long-term logging plans. This would allow continued and simultaneous use of the area for recreational, scientific, and industrial interests alike.

To put the issue another way, the companies were worried about running out of wood. The preservationists were worried about running out of that same wood also. At what point do these seemingly opposing interests meet in agreement? What, ultimately, do we demand of a resource that is fixed in extent no matter which side you take?

The arguments heard in the meetings revolved around the five options. Generalization of the points made by the three parties involved is difficult. Four thick volumes of public transcripts encompassing variations in the





(left) The provincial government's Island Highway extension, which passes through the Tsitika River drainage, will by late 1979 link northern Vancouver Island with Sayward and Campbell River.

(above) During the last few years, survey, research and inventory crews from virtually every resource agency of the provincial government have travelled the Tsitika drainage gathering valuable resource data necessary for development of an Integrated-Use Resource Plan.

understanding and trust each party had of the other's intentions, are in themselves an education in the difficult and contentious nature of public opinion regarding land use problems. They reveal how foolish it is to make assumptions about the attitudes of informed preservationists, industrial interests or affected local residents.

Through a number of presentations which were received favourably at the hearings, the forest industry took the position that the economic consequences of not working the Tsitika-Schoen moratorium area had to be weighed carefully. Loss of timber in the Tsitika-Schoen would reduce the annual allowable cut in each of the three TFLs affected. Reduction of that would result in the loss of hundreds of jobs and millions of dollars to the local economy. This possibility would have special significance to a community such as the nearby village of Sayward, which was almost entirely dependent on logging. In any case, conservation did not necessarily mean preservation. Instead, it meant that logging could be completed without undue damage to the environment. No group need lose use of an area under good industrial management.

This type of integrated resource approach had been successful in other areas. Furthermore, why preserve this watershed for research when others existed in Strathcona Park. These were not in use and represented similar ecosystems. Finally, where was the alternative land that would still allow employment of local loggers who had settled down with homes and families on the basis of the forest industry continuing in the area?

Opinion among the preservationists varied from outright mistrust of the company and government performance in the past with regard to timberland use, to sophisticated criticism of logging and resource planning practices. Supporting the benchmark proposal, they maintained that the research value of the Tsitika-Schoen area was important. Information on wildlife resources and other resource types was insufficient to properly formulate the Option 'E' advocated by the companies. Much more was needed to be known before such an integrated resource approach would be workable. Apart from research value, the Tsitika-Schoen was also a magnificent heritage for future generations. This idea needed to be weighed against the fact that man can never recreate a wilderness condition once it has been logged. Though other, smaller, untouched watersheds lay adjacent to the Tsitika, the moratorium area contained a broader diversity of wildlife living in undisturbed conditions. Preservationists were not necessarily against logging. But the Tsitika might be regarded as the last chance to save a complete watershed ecosystem — the last large, undeveloped one remaining on the island's north coast.

The third group, concerned North Island residents, their unions and regional boards, basically resented the "outside" interests intervening in the Tsitika-Schoen decision. After all, it was the residents who would have to live with the consequences of any decision. And those consequences could be serious. Their jobs, their homes and investments would be lost or devalued if logging were to cease or be curtailed in the area. As people who lived in a logging area, they were as aware of the need for conservation as anyone else. But a good economy was a heritage as important for future generations as the preservation of a magnificent wilderness. Integrated resource management was the best way to attain those two goals. The North Islanders favoured Option 'E' implemented quickly.

The hearings suggested several conclusions about the Tsitika-Schoen. Foremost among them was that more resource information had to be obtained before the interests of all concerned parties could be properly managed. This meant greater knowledge on the wildlife, the socio-economic effects of logging in the area, and what objectives research might have if the Tsitika-Schoen was to be held as a benchmark zone. But

This large stand of Douglas-fir is one of several recreation-fish corridors proposed for the Tsitika.

even with such information, the problem remained of finding a method to decide between emotional and cultural values about land use. The spiritual worth of a pristine wilderness could no more be denied than could a local resident's sense of well-being when he has invested his life and income on the basis of a continuing future for the forest industry. In the local terms of the Tsitika-Schoen dispute, there was a general consensus on a park being made at Schoen Lake. But the real issue was, could logging and preservation continue together? The task of the Environment and Land Use Committee over the next two years was to find a method by which this difficult question could be fairly approached. The results of ELUC study were issued on October 28, 1977. The decisions are:

1. A park of 8,192 hectares to be created around Schoen Lake.
2. An expansion of 3,539 hectares around Gold Lake into Strathcona Park.
3. 3,777 hectares of Schoen Creek Drainage released from moratorium.
4. The preparation of an Integrated Resources Management Plan for 34,333 hectares of the Tsitika Drainage, with continuation of the moratorium until the plan is approved.

In addition to the above decisions, seven ecological reserves have been proposed.

As an attempt at accounting exactly for the needs of all user groups in the area, while at the same time protecting the environment, the Integrated Resource Management Plan is the cutting edge of the ELUC decisions. Beginning with the composition of the Tsitika Planning Committee itself, the provincial government is trying to provide for all concerned. Present on this body are representatives from the Ministry of Forests (the Vancouver Forest District), Canadian Forest Products, Rayonier, MacMillan Bloedel, the Fisheries Department of Environment Canada, wildlife and fisheries biologists from the Fish and Wildlife Branch of the Ministry of Recreation and Conservation, the International Woodworkers of America, the United Fisheries and Allied Workers Union, the Tsitika Conservation Committee, and finally, a representative of the Ecological Reserves Unit of the Ministry of the Environment.

The group will jointly produce a folio of resource information for the Tsitika watershed. Having determined areas of high resource value or environmental sensitivity, they will then establish the prescriptions considered necessary to protect the values identified. The decision-making process will work in this way:

1. An inventory of resources and user needs is developed for the area.
2. The committee identifies environmentally sensitive areas and formulates prescriptions for their protection, to be agreed upon by all committee members.
3. Using the folio, and the prescriptions developed, five-year logging plans will be proposed which must comply with the prescriptions agreed upon by the committee.
4. The resource plans will be displayed, so that public suggestions can be taken.
5. The committee will then consider any further public input. This will complete the committe's initial part in the planning stage. The deadline for this is March 31, 1978.
6. The final resource plan will then be forwarded to ELUC for approval.

Important in this decision-making procedure is the public display. Local residents will be able to examine the intentions and the prescriptions of the logging plans. The comment resulting will provide a meeting ground for the public, which cannot necessarily be expected to understand complicated mapping systems and resource data, and the technicians who collect and use this information. Preservationist groups, whose members often have to go to considerable personal expense to examine contentious issues, will have ready access to the complexities of the Tsitika-Schoen plans.

No matter what criticism may be levelled at the Integrated Resources Management Plan, it represents a forthright approach to a multiple land-use problem. The public displays will no doubt open many eyes to the actual resources of the Tsitika-Schoen and the conservational capability of logging practices. But will it answer the basic dilemma of balancing preservation versus use? Doug Rickson, Chief Forester of Canadian Forest Products, and a sitting member of the Planning Committee, puts the problem succinctly: "I am as concerned about the deer as anyone else, but how much timber should we preserve to maintain current population levels? The provincial government must assess the overall socio-economic implications involved in these resource conflicts."

The decision on the Tsitika is an attempt to resolve this fundamental problem, at least in method of approach. But the heart of the multiple land-use issue remains in the unanswered question: what living standards, what moral purposes are the objectives of our society? No amount of technical information is going to supply us with that answer. The answer will have to be made subjectively and politically. However, the method of decision on the Tsitika shows that we cannot approach an answer unless all interested parties co-operate. The future need for such decisions will increase. Perhaps the Tsitika decision will not please everyone, but we are travelling in the right direction.

COLLECTIONS

Edited by Michael Gregson

The Big Tree Hoax

In the early 1900s, Washington state lumbermen holding a banquet in Vancouver were told by several B.C. loggers that the biggest trees grew in this province. As proof, the loggers presented the Americans with a photograph of the 417 foot Carey Fir. But the hoax failed when the Americans later identified the true subject of the photograph — a California redwood.

Kwakiutl Indian Customs Relating to Cedar-bark

"Even when the young cedar-tree is quite smooth, they do not take all the cedar-bark, for the people of olden times said that if they should peel off all the cedar-bark of a young cedar-tree, the young cedar would die, and then another cedar-tree near by would curse the bark-peeler, so that he also would die. Therefore the bark-peelers never take all the bark off a young tree".

Thirty-fifth Annual Report of The Bureau of Indian Ethnology, (1913-1914).
Franz Boas, pp. 616

Paper From Wood Pulp: A Canadian Invention

Watching wasps make their paper nests from a kind of pulp, Canadian Charles Fenerty conceived the idea of producing paper from wood fibres. In 1838 he succeeded in making newsprint from wood pulp. Fenerty's invention was timely; up until then newsprint had been made from rags, but the newspaper boom of the mid nineteenth century produced such a demand for newsprint that only the wood pulp process was found able to meet it.

The Volume of Timber

The volume of B.C. timber harvested was greatest in 1976 when about 25.5 million cunits were harvested. The 1976 harvest was significantly larger than the one in 1975, when only 17.7 million cunits were harvested. (A cunit is equal to approximately 100 cubic feet of log volume or 1.28 cords).

The rarest bear in British Columbia is the Kermode. A white colour-phase of the common North American Black bear, the Kermode is termed a Geographic Race, meaning that it is not a distinct species of bear, but a subspecies occurring within a certain area. For the white Kermode, this limited range is from South Bentinck Arm north to the Nass River and the islands off that stretch of coast, and east up the Skeena as far as Smithers. The Kermode is very seldom sighted.

Interior bears produce another colour-phase type, the Cinammon bear. And on the coast of Alaska, there is a type known as the Blue bear. The Blue bear has not been seen in British Columbia.

Rarest Tree in B.C.

Although hardly one of a kind, the Pacific Yew (Taxus Brevifolia) is probably the rarest tree in B.C.'s forests because it occurs usually alone in stands of other trees.

Yews are a scraggly, slow growing tree reaching a height of 25 feet. Mainly a Coast species, they occur also in the Selkirk Mountains south to Nelson; in the Rocky Mountain Trench; at Chapman's Bar on the Fraser and in several other limited Interior locations.

The wood of a Yew is very hard because of its slow growth, even though it is considered a softwood. Yews also are distinctive for having no cones.

The hard wood of the Yew makes the most decay-resistant fence post in an untreated condition. Yew posts have been known to last up to 60 years in the ground.

Advantages of Wood as Construction Material

'. . . wood has the great advantage of being renewable — it grows rather than being exhaustible as is iron ore, bauxite, or other aluminum sources, and the various fuels needed to process the metals. Transformation of wood from standing tree to final construction material requires vastly less energy than does the comparable transformation of ore to construction metal, or of limestone to cement. As a result, the environmental impact of producing wood is far less than the environmental impact of producing any substitute building material. In addition, wood is biodegradable in a way that metals are not. Wood can be disposed off more easily and more quickly than other building materials when it is no longer usable in its original or primary purpose. As the nation becomes more conservation-minded, the potentialities of wood loom larger".

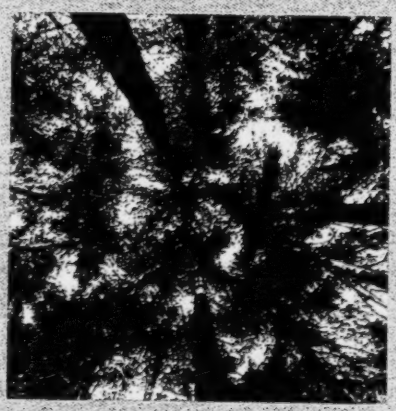
"Forests for whom and for what"
Marion Clawson, 1975

Two Canadians recently invented a cattle feed made entirely from wood waste. This "tree feed", as it is known, needs only the addition of protein to make it nutritious for cattle. The animals do not apparently notice any difference between "tree feed" and traditional feeds, such as hay.

Economics

"Contrary to popular belief, economics is not simply the science of commerce, nor even of market exchange. Both are included, but in its broader application, economics is the study of social choice in allocation of scarce resources to maximize human welfare".

'Apply Economic Criteria to National Forest Harvest to Improve Resource, Generate Income.'
Dr. John L. Walker,
FOREST INDUSTRIES, October, 1977



Artificial Thinning of Forest

Artificial thinning of forest is the process of cutting out trees from a young stand in order to speed growth in the trees left standing. The benefits of this process:

- Competition for light and nutrients is reduced for the trees left standing on the site. They grow faster and reach commercial size sooner. This allows a quicker return on investment in forest land.
- Only trees of good shape, health, large size and desireable species are left.
- Many forms of wildlife flourish in thinned forest.
- The faster growth and increased vigour of artificially thinned forest gives industry more flexibility in deciding which types and sizes of trees will be needed to meet future wood market demands.

With no other tree within 50 kilometers of it, a tree in an oasis of the Tenere Desert in the Niger Republic, Africa, is considered to be the remotest tree in the world. In 1960, a truck driven by a Frenchman struck the tree. The tree has survived the accident.

B.C.'s Largest Forest Fire

Although forest fires have always occurred in British Columbia, exact data on them has not been kept until recently. The largest statistically recorded fire was started by lightning on July 19, 1971. The Tee Fire, as it is known, burned 272,640 acres (426 sq. miles) in the general proximity of Mile 500 on the Alaska Highway and the Liard River. Though the bulk of the fire fighting crews were pulled out on September 14, the fire was not declared completely out until October 21, 1971. Total damage to tree cover from the Tee Fire amounted to about $4,600,000.

Only about 5% of all forest fires in British Columbia inflict costly damage.

Forest Facts

British Columbia produces 67% of all softwood lumber manufactured in Canada, 88% of softwood, plywood, 27% of the pulp, and 17% of the paper.

The largest customers for B.C. wood products are the United States (56%), the European Economic Community (24%) and Japan (10%).

The Interior region contains almost 44 million hectares of forest. Though the Interior forest on the whole contains smaller trees, its extensive area has an aggregate growth of over seven times that of the Coast forest.

The largest tract of privately owned forest land is the 162,000 hectare E&N Railway belt on Vancouver Island. Private owners control 4% of all forest land in the province.

The wood product and pulp and paper industries account for 50% of the value of provincial factory shipments.

During the period 1976-77, 290,030 Freshwater Angler's Licences were issued in B.C. This is nearly 100,000 more than ten years ago.

Giants of Other Species

While Douglas-fir and western redcedar hold the records for the tallest, oldest and largest of trees in British Columbia, other species come close.

In 1965, a Sitka spruce believed to be the largest ever was reported still standing near Port McNeill on northern Vancouver Island. It's height was 286 feet. Another, cut in the Queen Charlotte Islands, measured 275 feet high.

An individual 243 feet high, felled in the region of Woss Lake on northern Vancouver Island, is thought to be the tallest known hemlock.

"Methusalah" is the oldest living tree in the world. Located in Southern U.S.A., "Methusalah" is thought to be over 4,600 years old. However, another Bristlecone pine named WPN-114, when cut down with a chainsaw, was found to be 4,900 years old — the record for known age in trees.

In terms of *potential* lifespan, the California "Big Tree" (*Sequoia Gigantea*) is supposed to be able to live for 6,000 years. Though Bristlecone pines hold the record for actual lifespan, their potential age is 5,500 years.

B.C.'s Highest

The highest logging railway trestle in the province, and possibly in the West, is thought to be the Bear Creek trestle. Now partly demolished, the Bear Creek trestle was 274 meters long and 77 meters high. The structure is on southern Vancouver Island on land held by British Columbia Forest Products Ltd.

Metrics

mm
(millimetre)

The thickness of a dime is about **1 mm** and **10 mm** or **1 cm** is equal to a stack of 10 dimes.

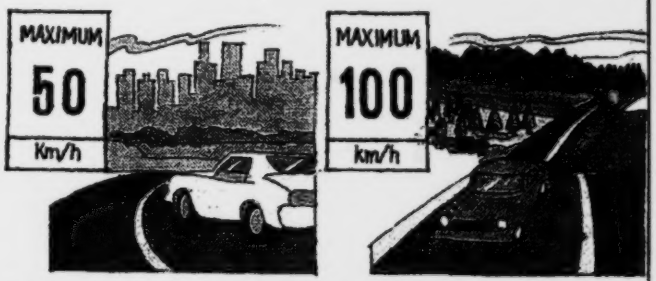
cm
(centimetre)

A convenient unit for shorter lengths is the centimetre.

100 cm = 1 m

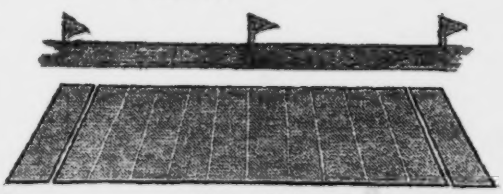
m
(metre)

A door opening is about **2 m** high and a door handle is approximately **1 m** from the floor.



km/h
(kilometre)

A **50 km/h** speed limit will apply in most cities. Actual speed limits will be established in accordance with local regulations. A **100 km/h** speed limit will likely be the most common on freeways. On most rural two-lane roadways, **80 km/h** will be typical.

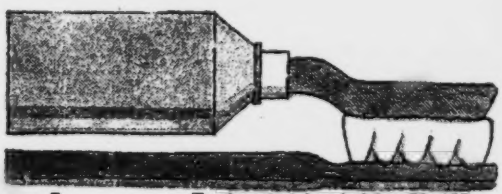


ha
(hectare)

We use the hectare to measure very large areas. A Canadian football field with end zones is a little less than **1 ha** in area.

ℓ
(litre)

Many products such as gasoline, paint and cooking oils will be sold in litres. Milk containers in the range of **1** to **5 ℓ** could be the most common sizes for this product.



ml
(millilitre)

Toothpaste tubes holding **50, 100** or**150 ml** are examples of some articles sold in tubes.

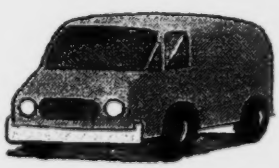
g
(gram)

Many foods will be sold in packages measured in grams.

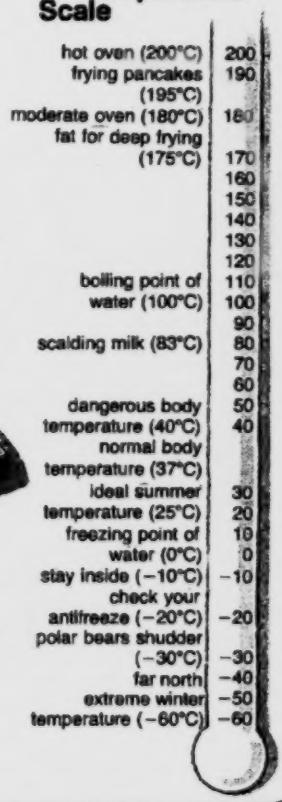
1000 g = 1 kg

t
(tonne)

In measuring larger masses, the unit is the tonne, which is **1000 kg**. A mass of **1 t** is what a van or pickup could carry.



°C Celsius Temperature Scale



Nature's Blanket

by **Enid K. Lemon**

photography by Enid K. Lemon, Tom Sowerby, Richard and Rochelle Wright

Snow is a natural element in the lives of many people, creatures and plants in the northern hemisphere. In fact, the white blanket covers more than half of the earth's surface at some time during the year.

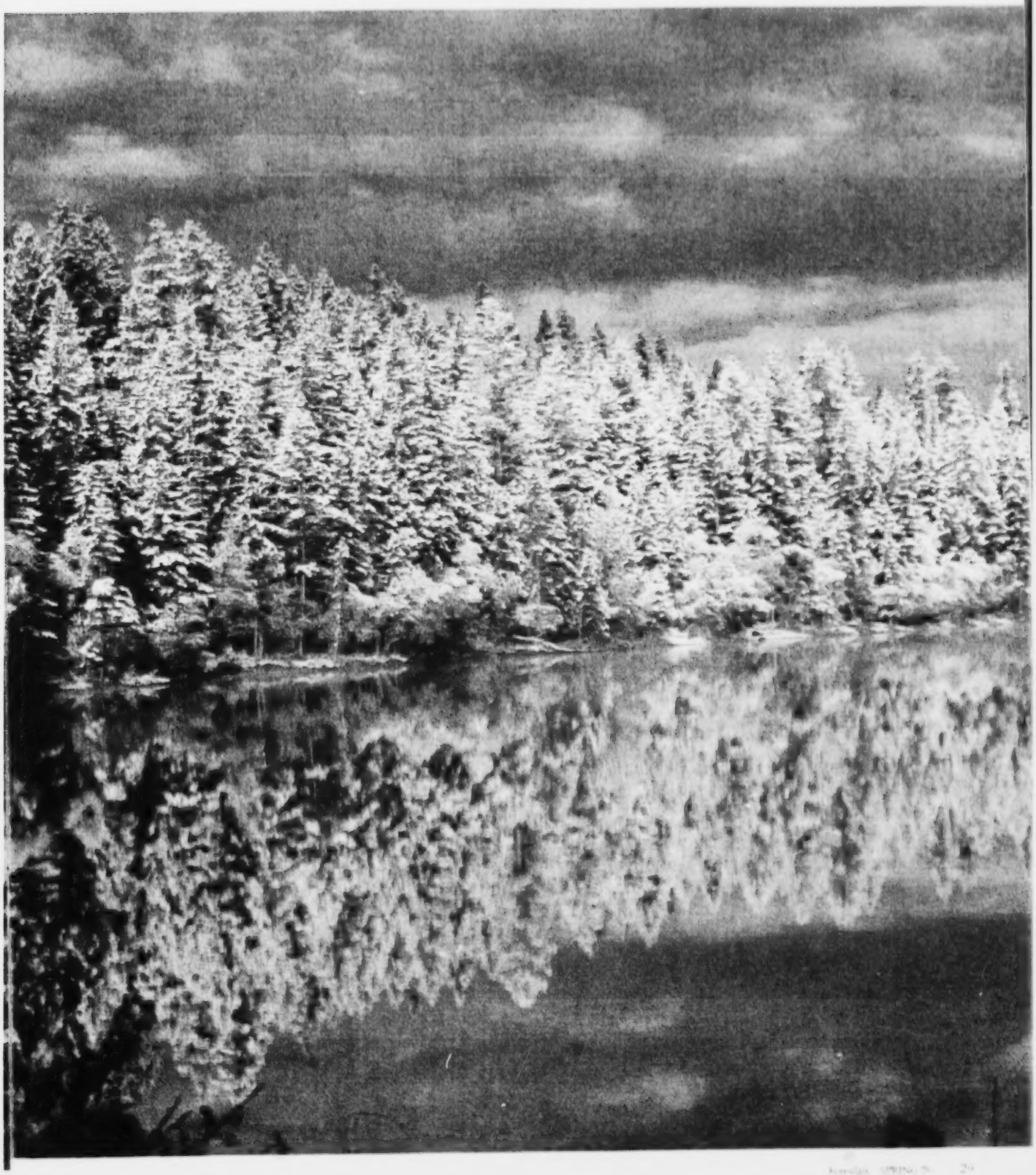
There is an increasing interest developing in the study of snow. Among the Canadian pioneers in this field is Dr. William O. Pruitt Jr., from the University of Manitoba. In common English usage there is only one word for snow, but Dr. Pruitt, borrowing from the vocabulary of the Inuits, Indians and Laplanders has found words to distinguish various types of snow. *Quali*, for example, is snow that is on the trees. Snow on the ground is *aput*. The bottom layer of the *aput* is *pukak*, which provides a winter habitat for a host of small mammals.

What about the animals that spend the winter in the *aput* region? Those without the ability or instinct to migrate to warmer climates, and unable to obtain food, enter a deep sleep by reducing their body temperature and slowing down the rate of their heart beat. Chipmunks and skunks are deep sleepers. Bats hibernate in caves and other enclosed spaces such as houses. The Mourning Cloak, a butterfly noted for its longevity, will find a sheltered cranny, perhaps behind some bark, in which to rest and then may reappear on the first day of spring.

Raccoons will not be severely handicapped by food shortages, for like most animals, they prepare themselves for winter by putting on a large layer of extra fat. The deer's winter coat is thicker than the summer one, and in addition there is an undercoat which helps to keep the animal warm.

Deer fare better in an area with a vegetation mix of shrubs and older trees which provides both food and shelter. Boughs bent under heavy snow, the older trees supply browse, while the deer can also feed on the shrubs. During this struggle for existence they often gather in deeryards from which trails spread

A quiet forest on Garbut Lake laiden with golden snow.



out to available food supplies. The trails have their dangers — predators also use them to find prey.

Many animals have adapted themselves well to moving in heavy snow conditions. The moose, with its stilt-like legs, can travel through snow that would stop deer or wolves. The Snowshoe Hare has broad, hind feet padded with stiff hairs, which prevent it from sinking into deep snow. The shape of the hind feet give this animal its name.

The Short-tailed Weasel provides an example of another adaptation to snow — camouflage. The weasel changes its rich brown summer pelage to clear white except for the tip of the tail. This provides excellent protection from its predators — the coyotes, foxes and marten. The weasel itself is a voracious hunter. Birds, shrews, mice and squirrels account for the bulk of its diet.

How do resident birds adapt to the snow? With insulating air pockets between their feathers, the birds of the forest can withstand extreme temperatures. Seemingly taking no notice of the weather, the woodpecker family continues to search for insects hidden under the bark. The siskins flit from tree to tree looking for leftover seeds. Using snow itself as an insulator, the Ruffed Grouse dives headlong into a snowbank to spend a comfortable night.

Snow is a wonderful insulator. Above the timberline it protects small plants, while in the valley below, the ranchers' alfalfa would die if not covered with snow before frost has had a chance to damage the roots. And it is in the moderately warm and stable environment of the *pukak* (the bottom layer of the snow) that small animals, such as mice and shrews, are found. In above-snow temperatures these small creatures would quickly freeze to death because their bodies are not large enough to produce the heat necessary to stay alive. But in tunnels made through grass and other herbaceous plants matted beneath the snow, they continue to live and breed. They are never without food.

Shrews, ounce for ounce among the fiercest of animals, satisfy their enormous appetites by eating insects and snails wintering under the snow — and sometimes the occasional mouse with whom they have been sharing a tunnel!

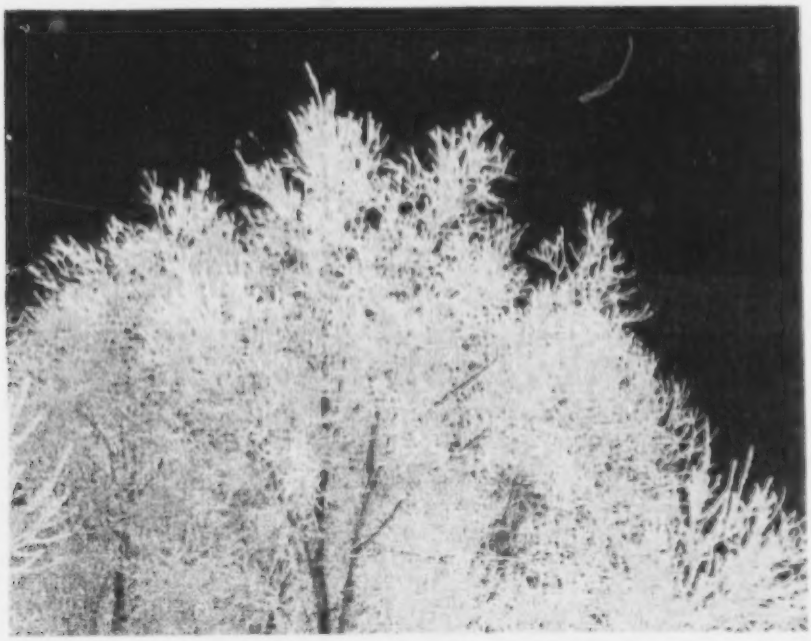
A small herd of white-tail deer.

(opposite page)
"Quali", the native word to describe trees covered in snow.

(middle) The Morning Cloak Butterfly.

(left) Ptarmigan, a bird of high country.

A snow fence in place to protect a research project at the Ministry of Forests' Cowichan Lake Experiment Station on Vancouver Island.



Conditions above the *pukak* are constantly changing. There may be more snow falling, or a warm front may produce a thaw. Then it freezes up again and a layer of crusty ice is formed. There is always bacterial action taking place below the snow, resulting in an accumulation of carbon dioxide which is prevented from escaping by the layer of ice on the *api*. To avoid the risk of asphyxiation from a build-up of carbon dioxide, and also to provide themselves with more oxygen, the small inhabitants have developed a clever solution — they construct ventilation shafts through the snow to the air above!

The relationship between the forests and snow is a very complex one. For example, by affecting the melting rate of snow, forests influence local climate. Snow falling on the canopy of the forest induces more evaporation than would normally occur if all the snow had fallen to the ground. Yet by shading snow on the forest floor, trees slow the melt, which in turn helps control the spring runoff and minimizes soil erosion.

Forests cannot do without snow, for it sustains the supply of moisture to the trees. But the *quali* snow (snow on the trees), which looks so beautiful and fluffy, is deceptive. Its accumulated weight on the branches of a tree, plus in many cases a freezing condition, causes the cracking of fibres in the tree's trunk. When this occurs, the tissues expand and the branches snap off. The trunk itself can shatter, bringing the whole tree crashing to the ground. Yet the fallen tree provides a feast for many animals of the forest.

Man's efforts with working with trees can be affected by the snow. Seedling loss in the Ministry of Forests' nurseries is reduced if snow, coming before the first freeze-up, traps the warmth in the soil. This insulation prevents frost heave (the upheaval of moist soil caused by freezing) from lifting seedlings out of the ground. Snow can also be a headache to research scientists working with rooted graft stock. The delicate area in which the scion (the twig from a parent tree) has been grafted to the rootstock is very fragile. For protection, snow fences are placed horizontally, about one meter above the rooted stock.

Though snow plays a vital role in the fortunes of many living things, there are those who enjoy it just for fun. On a frozen river you might see an area where the coyotes have been playing their dog-like games. The otter is driven to a frenzy of delight at the first sight of snow. Sliding on his chest down the banks of a creek, he looks for all the world like a brown toboggan — repeating his exercise of pure joy many times over. One wonders if the otter feels that the snow was sent from heaven just for his fun!

BOOKS FOR SCHOOLS AVAILABLE

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